

**Carbon Monoxide Sensor** In top photo a General Electric Company engineer is taking a reading of the carbon monoxide level in an industrial facility. The instrument he is using is GE's new Carbon Monoxide Dosimeter, an adaptation of spacecraft fuel cell technology.

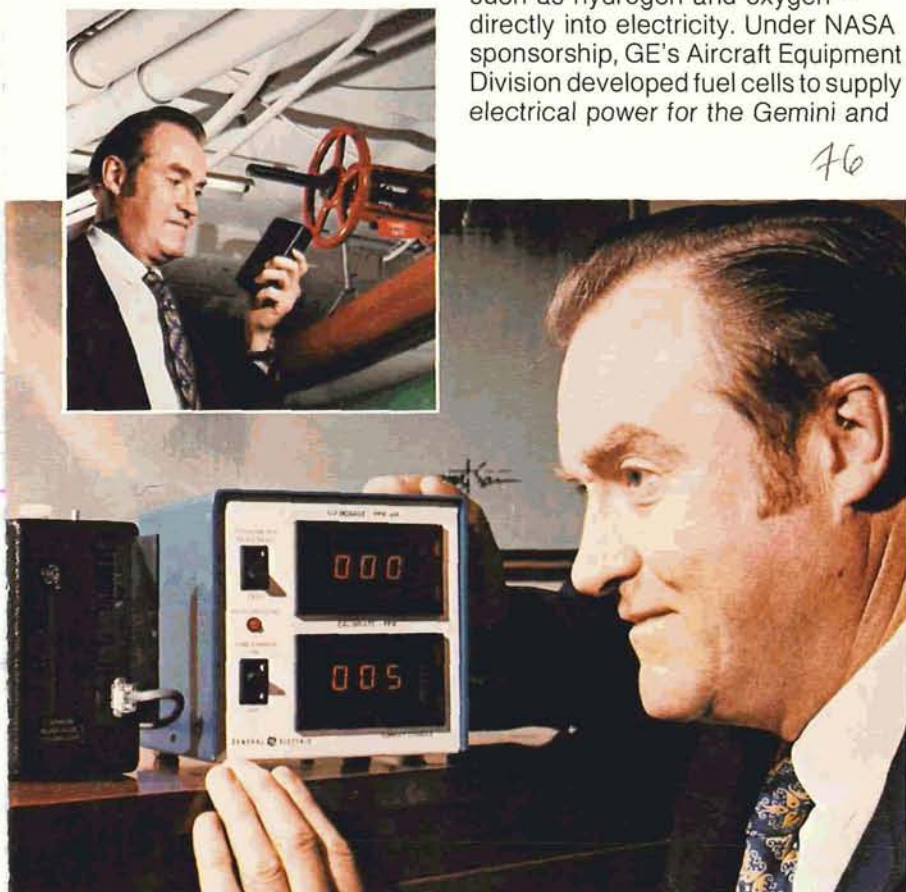
The fuel cell is a system which employs an electrochemical process to convert gases—such as hydrogen and oxygen—directly into electricity. Under NASA sponsorship, GE's Aircraft Equipment Division developed fuel cells to supply electrical power for the Gemini and

Biosatellite spacecraft of the sixties and is currently working on advanced fuel cell development. This long-term effort has resulted in a series of spinoff applications using the same general technology for a variety of purposes, among them the recently marketed Dosimeter.

The Dosimeter is designed to help users meet safety requirements for industrial atmospheres, as specified by the Occupational Safety and Health Administration and other regulatory agencies. The compact, pocket-sized sensor measures personnel exposure to carbon monoxide and provides both a visual and an audible alarm if the concentration of the gas exceeds preset levels. The Dosimeter offers substantial improvement in measuring accuracy over earlier warning indicators.

The larger photo shows the sensor being used in conjunction with a related GE system, the Dosimeter Support Console. The latter device is a digital calculator and display unit which gives a readout of the carbon monoxide level at a given instant, along with a measurement of the accumulated dosage over a period of time.

The Dosimeter is in production and deliveries started late last year. It is the first member of a planned family of GE portable and stationary electrochemical sensors designed to monitor various toxic gases and vapors.



**Hydrogen Generator** Another spinoff from spacecraft fuel cell technology is the portable hydrogen generator shown. Developed by General Electric Company, it is an aid to safer operation of systems that use hydrogen—for example, gas chromatographs, used in laboratory analysis of gases, or flame ionization detectors used as pollution monitors. The generator eliminates the need for high-pressure hydrogen storage bottles, which can be a safety hazard, in laboratories, hospitals and industrial plants. The unit supplies high-purity hydrogen by means of an electrochemical process which separates the hydrogen and oxygen in distilled water. The oxygen is vented away and the hydrogen gas is stored within the unit for use as needed. GE's Aircraft Equipment Division is producing about 1,000 of the generators annually.